



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/667,777	09/22/2000	Mitsuaki Komino	08038.0044	1267

22852 7590 01/11/2006

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER

ZERVIGON, RUDY

ART UNIT PAPER NUMBER

1763

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/667,777

Applicant(s)

KOMINO ET AL.

Examiner

Rudy Zervigon

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 36-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 36-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 14, 2005 has been entered.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 36-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sagusa et al (JP09-165681)¹ in view of Smith; Peter C. (US 5,600,530 A) and Hirano; Shinsuke et al. (US 6,120,661 A). Sagusa teaches an electrode (Figure 1A,B; Figure 3,4 - [Means for solving the problem], Translation) comprising:

- i. base metal ("aluminum rolled stock 13" [0011]) made of a cast metal – Applicant's specification (page 12, line 37 – page 13, line 2) teaches aluminum as the "cast metal" – claim 36
- ii. a heater ("sheath heater 11"; [0011] computer translation) embedded in the base metal ("aluminum rolled stock 13" [0011]) and arranged on a plane – claim 36

Sagusa does not teach:

¹ Refer to Japanese Patent Office machine translation of November 6, 2002.

- i. at least one core metal plate embedded in the base metal (“aluminum rolled stock 13” [0011]) and arranged substantially parallel to the plane and adjacent to the heater (“sheath heater 11”; [0011] computer translation), wherein the heater (“sheath heater 11”; [0011] computer translation) and the core metal plate are cast² in the base metal (“aluminum rolled stock 13” [0011]) such that the core metal plate is entirely surrounded by the base metal (“aluminum rolled stock 13” [0011]) and is entirely in metal-to-metal contact with the base metal (“aluminum rolled stock 13” [0011]), and wherein a material forming the core metal plate has a rigidity (stainless steel, as per Applicant’s specification vs. Aluminum for the base metal – page 12, lines 30-37) higher than that of a material forming the base metal (“aluminum rolled stock 13” [0011]) – claim 36
- ii. The electrode (Figure 1A,B; Figure 3,4 - [Means for solving the problem], Translation) according to claim 36, wherein the core metal plate has a plurality of through holes, which are filled with the base metal (“aluminum rolled stock 13” [0011]) so that the base metal (“aluminum rolled stock 13” [0011]) above the core metal plate and the base metal (“aluminum rolled stock 13” [0011]) below the core metal plate are bound together via the base metal (“aluminum rolled stock 13” [0011]) filled in the through holes – claim 37
- iii. The electrode (Figure 1A,B; Figure 3,4 - [Means for solving the problem], Translation) according to claim 37, wherein each of the through holes has a diameter ranging from about 0.1 mm to about 10 mm – claim 38
- iv. The electrode (Figure 1A,B; Figure 3,4 - [Means for solving the problem], Translation) according to claim 36, wherein the core metal plate is made of stainless steel – claim 39

² Cast *vb* 3 a : to dispose or arrange into parts or into a suitable form or order. Merriam-Webster’s Collegiate

Art Unit: 1763

- v. The electrode (Figure 1A,B; Figure 3,4 - [Means for solving the problem], Translation) according to claim 36, wherein the core metal plate has a thickness ranging from about 1 mm to about 2 mm, as claimed by claim 40
- vi. The electrode (Figure 1A,B; Figure 3,4 - [Means for solving the problem], Translation) according to claim 36, wherein said at least one core metal plate comprises two core metal plates arranged above and below the heater ("sheath heater 11"; [0011] computer translation), respectively, as claimed by claim 41
- vii. The electrode (Figure 1A,B; Figure 3,4 - [Means for solving the problem], Translation) according to claim 36, wherein the core metal plate is disk-shaped, as claimed by claim 42
- viii. The electrode (Figure 1A,B; Figure 3,4 - [Means for solving the problem], Translation) according to claim 36, wherein the material forming the core metal plate has a softening temperature higher than that of the material forming the base metal ("aluminum rolled stock 13" [0011]), as claimed by claim 43
- ix. A plasma processing apparatus comprising: a processing vessel; the electrode (Figure 1A,B; Figure 3,4 - [Means for solving the problem], Translation) as defined in claim 1; and a high frequency power source adapted to apply a high frequency voltage to the electrode (Figure 1A,B; Figure 3,4 - [Means for solving the problem], Translation), as claimed by claim 44

Hirano teaches

Art Unit: 1763

- i. at least one core metal plate (17B; Figure 14B,C; column 31; lines 17-50 – “stainless steel”), and wherein a material (stainless steel) forming the core metal plate (17B; Figure 14B,C; column 31; lines 17-50 – “stainless steel”) has a rigidity (stainless steel, as per Applicant’s specification vs. Aluminum for the base metal) higher than that of a material forming the base metal (“aluminum rolled stock 13” [0011]) – claim 36
- ii. the core metal plate (17B; Figure 14B,C; column 31; lines 17-50 – “stainless steel”) has a plurality of through holes (215) – claim 37
- iii. The electrode (Figure 1A,B; Figure 3,4 - [Means for solving the problem], Translation) according to claim 36, wherein the core metal plate (17B; Figure 14B,C; column 31; lines 17-50 – “stainless steel”) is made of stainless steel – claim 39
- iv. The electrode (Figure 1A,B; Figure 3,4 - [Means for solving the problem], Translation) according to claim 36, wherein the core metal plate (17B; Figure 14B,C; column 31; lines 17-50 – “stainless steel”) is disk-shaped, as claimed by claim 42
- v. The electrode (Figure 1A,B; Figure 3,4 - [Means for solving the problem], Translation) according to claim 36, wherein the material forming the core metal plate (17B; Figure 14B,C; column 31; lines 17-50 – “stainless steel”) has a softening temperature higher than that of the material forming the base metal (“aluminum rolled stock 13” [0011]), as claimed by claim 43 – stainless steel, as per Applicant’s specification vs. Aluminum for the base metal – page 12, lines 30-37
- vi. A plasma processing apparatus (Figure 13) comprising: a processing vessel; the electrode (Figure 1A,B; Figure 3,4 - [Means for solving the problem], Translation) as defined in

Art Unit: 1763

claim 1; and a high frequency power source (91/92; Figure 13) adapted to apply a high frequency voltage to the electrode (17B; Figure 14C,B), as claimed by claim 44

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Hirano's electrode (17B; Figure 14B,C) to Sagusa's apparatus, in multiplicity, under optimized dimensions, for use in Hirano's plasma processing apparatus (Figure 13).

Motivation to add Hirano's electrode (17B; Figure 14B,C) to Sagusa's apparatus, in multiplicity, under optimized dimensions, for use in Hirano's plasma processing apparatus (Figure 13) is for using a heated ceramic electrode that is durable as taught by Sagusa ([0012]) and Hirano (column 30, line 61 – column 31, line 13) and to prevent damages such as cracking during plasma processing as taught by Hirano (column 30, line 61 – column 31, line 13). It is well established that changes in apparatus dimensions are within the level of ordinary skill in the art. (Gardner v. TEC Systems, Inc. , 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied , 469 U.S. 830, 225 USPQ 232 (1984); In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04). Further, it is well established that the duplication of parts is obvious (In re Harza , 274 F.2d 669, 124 USPQ 378 (CCPA 1960) MPEP 2144.04).

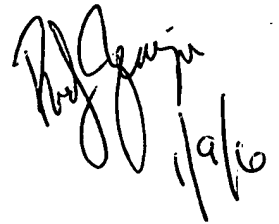
Response to Arguments

4. Applicant's arguments with respect to claims 36-44 have been considered but are moot in view of the new grounds of rejection.

Art Unit: 1763

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272.1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1763 art unit is (703) 872-9306. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.

Handwritten signature of Rudy Zervigon and date 1/9/16.